Our CBW Facilities Could Help Against Pestilences

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CHEMICAL AND radioactive pollution of the environment have so captured the popular imagination that the most serious threats to human welfare are sometimes overlooked. Throughout evolutionary history, infectious disease has been the overriding threat to the species. In contemporary life, only warfare makes a competing claim.

Antibiotics are often, but incorrectly, credited with a large share of the advances against disease. That credit belongs rather to environmental engineering. Procedures like the control of rats, fleas and lice, suppression of mosquitoes by drainage (and, let it be admitted, DDT), quarantine and the mechanical separation of drinking water from sewerage channels have prevented far more illnesses than medicine would know how to cure.

Bacterial infections are truly far less threatening now that antibiotics are available. However, to refute the cliche of the "conquest" of plague, one need merely look up the statistics of bubonic plague in Southeast Asia, of gonorrhea among teen-agers or of tuberculosis on Capitol Hill.

VIRUS INFECTIONS remain as a global time bomb against which we have few defenses once it has erupted. We are all well acquainted with the periodic sweep of influenza across the earth as new strains of viruses evolve. This disease is not to be shrugged off, but a minor change in the biology of the virus could give it access to the brain and make it a scourge without precedent.

Every year or so, furthermore, we read of a new, exotic virus that has broken out as a small epidemic. Such incidents probably occur quite often in medically deprived communities where new diseases may escape notice. Last month, virologists at Yale University announced that work on "Lassa fever" was too dangerous to continue at a university laboratory and required the special facilities of the National Communicable Disease Center of the Public Health Service at Atlanta.

This caution responds to a terrible responsibility which goes beyond the risks of infection and death of more laboratory workers. What would prevent the escape of such a virus to the general population?

We now hear that further cases of a disease resembling Lassa fever have been reported from Jos, another town in Nigeria almost 300 miles away. If this is confirmed, we have to conclude that this virus is widespread in Nigeria, and we can hardly afford not to study it to forearm ourselves against its spread. And we cannot blind ourselves to the likelihood that a hundred similar viruses are being incubated in animal population reservoirs, and are evolving anew with genetic changes and hybridization of established viruses.

PUBLIC HEALTH officials have been loath to dramatize this superordinate threat. It has, however, been ventilated by the policy studies on biological warfare that led to President Nixon's renunciation of U.S. research on germ weapons. As he implied, to use human intelligence for the intentional design of new diseases is so blatantly suicidal that it cannot be justified by any fancied military advantage.

However, the abandonment of secret development work merely stops more mischief; we have still to establish an effective international defense against the remaining threats of natural pestilence. These are seriously aggravated by the paradox of the coexistence of jet transport, famine and squalor.

Dr. P. Dorolle, deputy director general of the World Health Organization, is one of the few to have spoken out about the gaps in our present response. He refers, for example, to the threat that yellow fever may penetrate into Asia, where "the virus would find ideal climatic conditions, an unvaccinated human population and its favorite vector," the Aedes mosquito.

In this circumstance, every single uncontrolled case of yellow fever is a threat to hundreds of millions of people. Much the same could be said for many other diseases, which demands a level of international cooperation in surveillance and control that transcends political differences.

The necessary control methods will remain uncertain and awkward until we learn much more about viruses, particularly about their biochemistry and genetics, for which the basic tools have recently been perfected. The United States could do a great deal to restore its historic reputation as a defender of human liberties and health if it reassigned our erstwhile biological warfare laboratories, as at Ft. Detrick, to make them an international research center for virological peacefare.

This communication relates to a column "Science & Man" distributed weekly by the Washington Post.

Joshua Lederberg

Dear Harry-Rose

I saw your letter to the editor (2/22/70) and the editorial in the NYT (2/11) to which it responded only after this was in press.

I think you were quite right to answer as you did, for you were unfairly burdened.

The editorial did, nevertheless raise a more general question, similar to the one I put myself, that needs to be addressed about public health protection against new viruses. Obviously, the traveller who returns with no apparent illness at all, represents the worst hazard, and a responsibility hardly within your personal province

Sincerely,

Joshua